



## Wuhan Sunma Technologies Co., LTD.

88, Mingyuan Road, Optic Valley  
Hongshan Distric, Wuhan 430074  
Hubei Province, P. R. China  
Tel : +86-27-5177 9650 +86-27-5177 8865  
Fax: +86-27-5177 8865  
E-mail: info@sunmafiber.com  
Http://www.sunmafiber.com

## CATV & Broadcasting Product

Signal Level Meters

DVB & QAM Analyzers

Satellite Meters

Other Broadcasting Related

Wuhan Sunma Technologies Co., LTD.

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# Overview of SUNMA

"WUHAN SUNMA TECHNOLOGIES CO., LTD.", one of the leading fiber optic product manufacturers in China, specialized in supplying fiber optic equipments, fiber optic test instruments and other data network & telecom products.

"SUNMA TECHNOLOGIES" was founded in 2002 by Mr. Sunder Ma. Our sale and manufacture center is located at Wuhan city, which is the only Fiber Optic Valley of China. The producing department locates at Guanshan District, and our sales office locates at Hongshan District of Wuhan.



Equipped with advanced hi-tech producing and testing equipments, staffed with a team of highly competent talents for R&D and quality inspection, SUNMA devoted to the development and application research of hi-tech products.



Administering the quality standard of CE, UL, ISO9001/14001 strictly. With the excellent pre & after sales service, professional knowledge, talented team and superior product quality, SUNMA have won a great reputation from our worldwide users.



In recent years, we are distributing the products of many renowned foreign test and measurement companies including Fujikura, EXFO, Agilent, JDSU, Furukawa, Anritsu, Sumitomo, Dilithium and Spotwave. Till now, our products cover Fiber Optic Telecommunication, Wireless, Datacom, Power, Cable TV measurement and utilities already.

"Seeking Excellent Quality to Win Opportunities, Providing Professional Solutions to Improve Service, Keeping Sincerely Cooperation to Create Future", SUNMA expect the pure honest cooperation with much more peoples of the world



**ST-2002/2003 Mini Handheld Signal Level Meter**

**Features:**

- More dependable: made of high strength material; passed the various shock and bump tests.
- Smarter design: high technique integrated design; lighter weight make you enjoy your working.
- Level, Tilt and C/N measure

**Main Specifications**

Model	ST-2002	ST-2003
<b>Frequency</b>		
Range	46MHz ~ 864MHz	46MHz ~ 1GHz
Frequency Step	50kHz, 100kHz, 1MHz, 10MHz and 100MHz	
<b>Level Measurement</b>		
Range	30dBμV ~ 120dBμV	
Accuracy	±2dB (20°C ± 5°C)	
Resolution	0.5dB	
Digital Power Range	---	40dBμV ~ 110dBμV
<b>Voltage</b>		
Input Range	1V ~ 100V (AC/DC)	---
Measured Accuracy	±2V	---
Resolution	1V	---
<b>Others</b>		
Dimension	About 168mm×71mm× 42mm	
Weight	About 368g (Including the battery)	
Working Temperature	-10°C ~ 40°C	
Audio	Built-in speaker (Auto on in SINGLE FREQUENCY mode)	---
Power Supply	3.6V/2.1AH Ni-MH battery(Rechargeable)	3.6V/2.5AH Ni-MH
Operating Time	≥6hours (Shut off the audio and LCD backlight)	≥4 hours
Charging Time	Round 6 hours (Power off the meter)	



**ST-1181 Portable TV signal level meter**

**ST-1181** signal lever meter is adapting for CATV installation and measurement which is designed specifically for high-performance measuring instruments. It adopts digital reading, clear and accurate, the use of microprocessor makes the function enhanced much more. It supports single channel measurement, dual channel measurement, carrier difference measurement, carrier-to-noise ratio measurement, memory of last measurement status, and data storage etc.

**Specifications:**

- Channel/frequency  
Frequency range: 46MHZ-870MHZ  
Chinese standard channel: 1CH-56CH  
Supplement channel: Z1CH-Z43CH  
Frequency resolution ratio: 10KHZ  
Measured band width: 280KH
  - Level measurement  
Range: 25dBuv-120dBuv  
Measurement accuracy: +1.5dB  
Resolution ratio: 0.1dB  
Method of detection: peak detection  
Impedance: 75ohm
  - Carrier-noise ratio(C/N)  
Input range: > 70dBuv  
Accuracy: +2dBuv
  - Voltage measurement  
Input range: 0-80V(AC/DC)  
Measurement accuracy: +2V  
Resolution ratio: 0.1V
- All the above technical indexes are under indoor temperature(250C)**
- **Others:**  
1.Working temperature: -100C-450C  
2.Audio output: build-in speaker,numerical-controlled
  - **Power:**  
1.DC power: DC7.2V chargeable battery  
2.AC power: AC220/50HZ1 + 10% OR AC110/50HZ+ 10%  
3.Working time of battery: consecutive working hour > 4 hour(fully charged)  
4.Charging time: 8 hour

**Specifications:**

- Special charge: 1 charge
- RF input connector: 1Piece
- Meter Package: 1 piece
- Operators Manual: 1 book

**Capability:**

- Signal Level measurement.frequency spectrum analysis
- measurement
- panoramic scanning measurement  
Multi-channel Level measurement and all digital
- display
- same window
- A/V.C/N measurement
- Measurement of Trunk line Voltage
- Contains 100 locations inside(mmms optional )
- 46MHZ-870MHZ
- Gradient measurement
- Single frequency level measurement



### ST-1129 Signal Level Meter

The instrument adopts the all-number display, the readings on the measuring instrument are clear and precise, and owing to the introduction of the micro processing unit, therefore, it makes its functions stronger, the precision higher, operation more flexible and convenient. The large screen figure monitor is very convenient to measure the main technical targets of CATV system. It has the functions such as the single-channel, multi-channel, all-band scanning, difference-carrying measurement, signal-to-noise ratio (SNR, S/N) measurement and spectrum analysis frequency analysis etc.

#### Technical Specifications

- Tuning range: from 5M~862MHz
- Tuning mode: by channels or by frequency
- Level measurement
- Analogue channels Measurement
- IF bandwidth: 280kHz+50kHz
- Input impedance: 75ohm
- Measuring range: from 25 to 120 dBuV
- Accuracy: +2dB (from 0 to 400C)
- Digital channels Measurement
- MER (modulation error ratio) measurement range: 19~35dB for 64 QAM
- Accuracy : +2dB
- BER (bit error rate) measured before RS decoding
- measurement range: 10E-2 to 10E-8
- Symbol rate: 1MS/S-7MS/S
- Modulations type: 16/32/64/128/256QAM DVB-C/ITU-TJ.83-AnnexA
- Bandwidth: 8MHz
- Frequency tuner: 100 KHz
- Measuring range: from 40 to 120 dBuV
- Accuracy: +3dB (from 0 to 400C)

MODEL NO	Frequency Range	Constellation diagram	Features	Main Indexes	LCD
ST-128	46~870MHz	No	* Handhold Design * Level and V/A * Tilt and C/N measure * Channel spectrum scanning * Spectrum analysis * Trunk Voltage * Channel and single frequency mode	* Signal Level Measurement Range 30dB $\mu$ V ~ 120dB $\mu$ V Level Precision 1.5dB * Spectrum Analysis Span 4.5MHz, 9MHz, 18MHz 36MHz, 128MHz * Frequency 46MHz~870MHz(GQ-S200) 5MHz~870MHz (GQ-S200D) * Digital Channel Power Bandwidth 0.28MHz~9.99MHz	128 * 128 LCD
ST-128	5~870MHz				

MODEL NO	Frequency Range	Constellation diagram	Features	Main Indexes	LCD
ST-1128	46~870MHz	No	* Handhold Design * Channel spectrum scanning * spectrum analysis * Limit test and Auto test * PC Toolbox Software(option) * Support USB device and RS-232 connection * Analog, Digital, FM and Dual channel measurement * Support QAM 32 64 128/ITU-TJ.83 Annex A/B/C * Channel Power, MER, BER * Constellation Diagram (option)	* Signal Level Measurement Range 30dB $\mu$ V ~ 120dB $\mu$ V Level Precision $\pm$ 1.5dB * Spectrum Analysis Span 4.5MHz, 9MHz, 18MHz 36MHz, 128MHz * Frequency 46MHz~870MHz(GQ-S200) 5MHz~870MHz (GQ-S200D) * Digital Channel Power Bandwidth 0.28MHz~9.99MHz	128 * 128 LCD
ST-1128D	5~870MHz				
ST-1129	46~870MHz				
ST-128	5~870MHz	Yes			



### ST-2150Q QAM Analysis Meter

**ST-2150Q/ST-1185Q** is newly designed for both installation and maintenance of HFC system. It can Measure and display main parameters in the HFC network (channel power, MER, BER, Constellation Diagram), signal level on any frequency, the amplitude of the carriers singly in the whole system range, and etc. It inherited all ST1151B's strong points. The Analogue channel, QAM and FM channel can be set and tested efficiently; it also supports C/N measurement, voltmeter function, spectrum analysis and data logging. It is easy for ST2150Q/ST1185Q to obtain a report of test data via PC or printer. Additionally, ST2150Q/ST1185Q has a wider frequency range: 5MHz ~ 870MHz, so that models support return path testing.

#### Features

- Digital TV signal power measurement (QAM, QPSK, COFDM)
- Support 16/32/64/128/256 QAM/ITU-T J.83 A/B/C
- Level test
- Channel spectrum scanning
- Frequency spectrum
- Tilt/Level list
- Limit test
- Auto test
- Voltmeter feature
- Communicate with PC or Printer Output by serial
- Multiple user plan
- Intelligence Power Management
- Alphanumeric Inputting
- Fast setup

#### Specifications

Digital TV measurement	
Frequency Range	5MHz~870MHz
Accuracy	5×10-6 (20°C ±5°C)
Resolution	10KHz
Demodulation	64/256QAM(16/32/128QAM option)
Comply with standard	DVB-C/ITU-T J.83-Annex A/B/C
Power Level Range	30dBμV~110dB μV
Accuracy	±2dB
Bandwidth	Can be set
Symbol Rate (SR)	1MS/S-7MS/S
MER	22dB~39dB (64QAM)
Accuracy	±2dB
BER	Pre 1E-3 to 1E-9
Analog TV Measurement	
Level Range	20dBμV~120dB μV
Accuracy	±1.5dB
Resolution	0.1dB
Input impedance	75Ω
Channels Scan	150 channels MAX
Spectrum Bandwidth	2.5MHz, 6.25MHz, 12.5MHz,25MHz,62.5MHz
Power	
Power Supply	11.1V/1600mAh Lithium battery(Chargeable)
Charger	AC 100V~240V 50/60Hz
Work time	> 5 hours(Fully charged)
Charge time	< 3 hours



### ST-2350Q QAM Analysis Meter(1GHz)

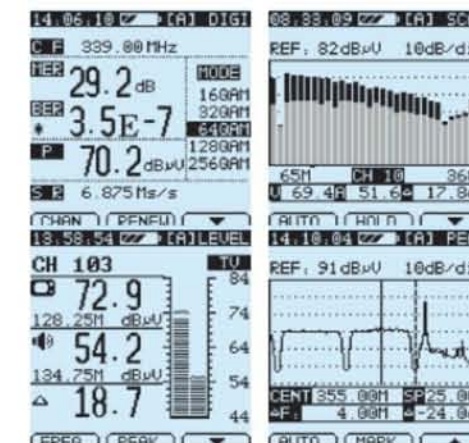
**ST-2350q** is newly designed for both installation and maintenance of HFC system. It inherited all ST-2150Q's strong points: Measure and display main parameters in DVB testing (channel power, MER, BER, Constellation Diagram), signal level on any frequency, amplitude of the carriers singly in the whole system range, and etc. The Analog, QAM and FM channel can be set and tested efficiently; it also supports HUM measurement, C/N measurement, voltmeter function, spectrum analysis and data logging. Also it is easy for user to obtain a report of test data via PC or printer through toolbox software. The highlight is that 2350Q has a wider frequency range: 5MHz ~ 1000MHz.

#### Features

- Digital TV signal power measurement(QAM, QPSK, COFDM) Support
- 16/32/64/128/256 QAM/ITU-T J.83 A/B/C
- Digital channel analysis(Constellation Diagram, MER, BER and etc.)
- Channel spectrum scanning
- Frequency spectrum
- Hum testing
- Tilt/Level list
- Limit test
- Auto test
- Voltmeter feature
- Communicate with PC or Printer Output by serial
- Multiple user plan
- Intelligence Power Management
- Alphanumeric Inputting
- Fast setup

#### Specifications

Digital TV Measurement	
Frequency Range	5MHz ~ 1000MHz
Accuracy	5×10-6 (20°C ±5°C)
Resolution	10KHz
Demodulation	64/256QAM(16/32/128QAM option)
Comply with standard	DVB-C/ITU-T J.83-Annex A/B/C
Power Level Range	30dBμV~110dB μV
Accuracy	±2dB
Bandwidth	6M/8M
Symbol Rate (SR)	1MS/S-7MS/S
MER	22dB~39dB (64QAM)
Accuracy	±2dB
Pre & Post BER	1E-3 to 1E-9
Analog TV Measurement	
Level Range	20dBμV~120dB μV
Accuracy	±1.5dB
Resolution	0.1dB
Input impedance	75Ω
Channels Scan	150 channels MAX
Bandwidth	2.5MHz, 6.25MHz, 12.5MHz,25MHz,62.5MHz
Power	
Power Supply	11.1V/1600mAh Lithium battery(Chargeable)
Charger	AC 100V~240V 50/60Hz
Work time	More than 5 hours(Fully charged)
Charge time	Less than 3 hours





### ST-2500/2500C New QAM Analyzer

ST-2500/2500C is a new product of SUNMA which bases on 1191's software & hardware technology. It is a QAM Analyzer with TFT LCD display which supports Linux Operating system. And this model inherits all measurement functions of 1191, increases many functions such as HUM, Depth of Modulation. Also it is optimized many key index for more convenient and precise Testing & Measurement.

#### Features

- DATV analysis: level, C/N, Hum, DOM
- QAM analysis: MER/BER and constellation, Digital level
- Support LAN; it can communicate with PC
- Enhanced Spectrum Analysis Function: Increasing Positive/Negative/Averaged Peak Value demodulation function
- Optimized DSP and Baseband Protocol Technology makes the testing rate faster
- Cable Modem Testing
- Linux operating system; Large memory; Fast display, Powerful file management functions
- Support USB device
- Support LAN; it can communicate with PC
- Return Path generator inside
- 4 inch 65K true colorized TFT LCD
- Perfect shell using ABS+PC plastic

#### Specifications

Model	ST-2500	ST-2500C
<b>ST-2500C Digital TV Measurement</b>		
Frequency Range	5MHz ~ 1000MHz	5MHz ~ 1000MHz
Frequency Resolution	10kHz	10kHz
Frequency Accuracy	±10×10 <sup>-6</sup>	±10×10 <sup>-6</sup>
Power Level Range	30dBμV ~ 110dBμV	30dBμV ~ 110dBμV
Level Resolution	0.1dB	0.1dB
Level Accuracy	±1.5dB (C/N>20dB)	±1.5dB (C/N>20dB)
Input Impedance	75Ω	75Ω
MER	~40dB	~40dB
MER Accuracy	±2dB	±2dB
EVM	✓	✓
BER	1E-4 ~ 1E-9(Pre/Post RS)	1E-4 ~ 1E-9(Pre/Post RS)
Modulation Type	16/32/64/128/256QAM	16/32/64/128/256QAM ITU-T J.83-ANNEX A/B/C
Constellation	✓	✓
Digital Statistical Function	✓	✓
<b>Analog TV Measurement</b>		
Frequency Range	5MHz ~ 1000MHz	5MHz ~ 1000MHz
Frequency Resolution	10kHz	10kHz
Frequency Accuracy	±10×10 <sup>-6</sup>	±10×10 <sup>-6</sup>
Level Range	30dBμV ~ 120dBμV	30dBμV ~ 120dBμV
Level Resolution	0.1dB	0.1dB
Level Accuracy	±1.5dB	±1.5dB
Input Impedance	75Ω	75Ω
Other Functions	C/N, V/A, Tilt, Limit Test, Channel Scan/Management, Auto Test, Trunk Volt	C/N, V/A, Tilt, Limit Test, Channel Scan/Management, Auto Test, Trunk Volt
<b>Spectrum analysis</b>		
Frequency Range	5MHz ~ 1000MHz	5MHz ~ 1000MHz
Frequency Resolution	100Hz	100Hz
Frequency Accuracy	±10×10 <sup>-6</sup>	±10×10 <sup>-6</sup>
Level Measurement Range	10dBμV ~ 120dBμV	10dBμV ~ 120dBμV
Level Resolution	0.1dB	0.1dB
Level Accuracy	±1.5dB	±1.5dB
Dynamic Range	60dB	60dB
Input Impedance	75Ω	75Ω
RBW	30KHz/100KHz/300KHz/1MHz/3MHz ( Self-Adapt )	30KHz/100KHz/300KHz/1MHz/3MHz ( Self-Adapt )
Sweep time	300ms/field (8MHz)	300ms/field (8MHz)
Measurement Bandwidth	995MHz MAX	995MHz MAX
Return Path Noise Testing	✓	✓
Cable Modem		DOCSIS2.0, EuroDOSISCM Statistic function /Ping/bandwidth testing/website browser
<b>Other</b>		
Dimension	About 266mm×160mm×82mm	About 266mm×160mm×82mm
Weight	About 1160g	About 1160g
Power Supply	14.8V 2.1AH Lithium battery(Chargeable)	14.8V 2.1AH Lithium battery(Chargeable)
Charge Time	4~5hours	4~5hours
Continuous Work Time	More than 6 hours(Fully charged)	More than 6 hours(Fully charged)



### ST-5200 QAM Signal Generator

ST-5200 is ideal return path generator for HFC system installation and maintenance.

- Wide frequency covers return path
- Large level dynamic range
- Multi-function module: RF, Pulse, Sweep
- Parameter setup memory

Analog TV Measurement	
Range	CW: 5MHz-120MHz Digital Signal: 5MHz (Left Edge Frequency) -120MHz (Center Frequency)
Accuracy	±2ppm
Resolution	10kHz
Level	
Range	Level Accuracy
Accuracy	C W : ± 1 . 5 d B Digital Signal: ±2.0dB
Resolution	0.1 dB
Output Impedance	75Ω
VSWR	<0.2
Spectrum Pureness	
Harmonic Restraint Ratio	≤-40dBc
Non Harmonic Sicray	≤-40dBc
Phase Noise	(At 50MHz CW) 85dBc@10kHz 105dBc@100kHz
Modulation Signal	
Type	QPSK, 16/64/256QAM
SR	1MS/s-7MS/s
BW	1.25MHz-8.75MHz
Roll Off	α=0.25
MER	> 36.0dB
BER	<1E-9 Errors
FEC	RS(204, 188)
Frequency Sweep	
Range	5MHz 120MHz (CW)
Step	10kHz 1MHz
Frequency Interval	10ms
Level Flatness	<2.0dB
Others	
Advance Setup	5
Communication Port	RS 232C
Working Temperature	-20℃ ~ 50℃
Size	About 218mm×95mm×49mm
Weight	About 800g
Battery Life	>4 hours



### ST-1191 DVB Analyzer (PC Connected)

ST-1191 signal level meter is adapting for CATV installation and measurement which is designed specifically for high-performance measuring instruments. It adopts digital reading, clear and accurate, the use of microprocessor makes the function enhanced much more. It supports single channel measurement, dual channel measurement, carrier difference measurement, carrier-to-noise ratio measurement, memory of last measurement status, and data storage etc.

#### Specifications:

Analogue Channel Measurement	
Frequency Range	5MHz ~ 870MHz
Frequency Resolution	10KHz
Resolution Bandwidth	100KHz ~ 300KHz (self adapting)
Frequency Stability	±10ppm
Measurement Range	30dB μV ~ 120dB μV
Level Resolution	0.1 dB
Level Precision	±1.5dB at 25℃
Digital Channel Measurement	
Frequency Range	5MHz ~ 870MHz
Frequency Resolution	10KHz
Frequency Stability	±10ppm
Channel Bandwidth	8MHz or 6MHz
Measurement Range	30dB μV ~ 110dB μV
Level Resolution	0.1 dB
Level Precision	±1.5dB
MER Measurement Range	22 dB ~ 40dB (64QAM)
Level Precision	±1.5dB at 25oC
Modulation Type	QPSK, 16/32/64/128/256QAM ITU-T J.83Annex A/B/C
Symbol Rate	1MS/S ~ 6.9 MS/S
Spectrum Analysis	
Frequency Range	5MHz ~ 870MHz
Frequency Resolution	100Hz
Frequency Stability	±10ppm
Resolution Bandwidth	30KHz ~ 3MHz (1, 3, 10 step)
Level Precision	±1.5dB at 25oC
Measurement Range	10dB μV ~ 120dB μV
Average Ground Noise Without Input	<10 dB μV(RBW300KHZ)
Minimum Span	30KHz
Sweep Time	100ms ~ 300ms/field
Marker	Two, and can do difference measurement between signals
Markers' Frequency Resolution	100Hz (minimum while span is 30KHz)
Others	
Input impedance	75ohm
Power Supply	14.8V/2.1AH lithium battery (Chargeable)
Dimension	About 266mm×160mm×82mm
Weight	About 1160g
Operating Time	More than 6 hours continuously, typical value at 25℃ (Fully charged)
Charging Time	4 ~ 5 hours

#### Features & Applications:

- Analog channel analysis (LEVEL, TILT, C/N and etc.)
- Digital channel analysis (Constellation diagram, MER, BER and etc.)
- Powerful spectrum analysis
- Limit test
- Auto test
- Multiple users' channel plan
- Communication with PC
- More than 6 hours operating time (Fully charged)†
- Large LCD display area
- Handset





### ST-Mini30 Satellite Meter

#### Description:

It is a dedicated instrument for the direct version of the program using ST-Tech, integrated market-seeking Satellite, launched digital search Satellite. Mini30 large font display, soft keys, user-friendly design, the appropriate use of more people. Satellite lock accurate, not false positives or missing signals, just listen to the sound of a few seconds can rapidly lock signal frequency. LCD screen of 3.5, you can directly download the free satellite watch, suitable for tall buildings and electric field and check the place is not convenient to find the signal.

The Mini30 have the spectrum analyzer function, Choose a more suitable professionals, it support 9 languages. It is higher Version of Mini20 satellite meter, More suitable for professional usage, Prices will be more affordable than similar products!

#### Specifications:

- System Standard: DVB-S
- System Cpu: 200MIPS
- Input Frequency: 950~2150MHz
- Input Level: 65dBm ~ 25dBm
- Symbol Rate: 2M---45M
- Connector: F type Screen: 3.5 Inch
- High definition LCD
- Sound: Built-in speaker audio output
- DiSEqC: 22KHz switch Indicator light 13/18V
- upgrade cable: RS323 COM port cable
- updrade Software: RS323 port for software updatas
- Working time: 2-4hours or more
- Operating temperature: 0°C ~ +50°C
- Size: 9.6cm\*15.8cm\*4.8cm

- Support 9 languages
- World most advanced
- High build quality
- High resolution spectrum
- Diseqc switching
- Sound warning prompt locking satellite
- High level accuracy
- DBV-S measurement
- Easy to use
- Small and light weight
- Satellite Spectrum Analyzer

#### Package Content:

1. Common power supply adapter or Cigarette lighter adapter 1 piece (Note: Adapter is optional. )
2. RF input connector GMHF-L3/8-JK 1 piece
3. Instrument bag 1 piece
4. Operator manual 1 piece
5. CD-ROM 1piece
6. Data cable 1piece



### ST-Mini20 Satellite Meter

#### Description:

Mini20 finder is a dedicated instrument for the direct version of the program using ST-Tech, integrated market-seeking Satellite launched digital search Satellite. Mini20 large font display, soft keys, user-friendly design, the appropriate use of more people. Satellite lock accurate, not false positives or missing signals, just listen to the sound of a few seconds can rapidly lock signal frequency. LCD screen of 3.5, you can directly download the free satellite watch, suitable for tall buildings and electric field and check the place is not convenient to find the signal.

Mini20 settings and calibration for the satellite antenna is very fast and convenient. Through the system default parameters of the satellite, it will be convenient quick, simple and accurate adjustment of the satellite antenna point of view, needed to capture the satellite signal.

#### Key Features:

- Support 9 languages
- High build quality
- Diseqc switching
- Sound warning prompt locking satellite
- Lcd tv function
- Watch the free channels
- Easy to edit by hand
- Very small and portable

#### Package Contents:

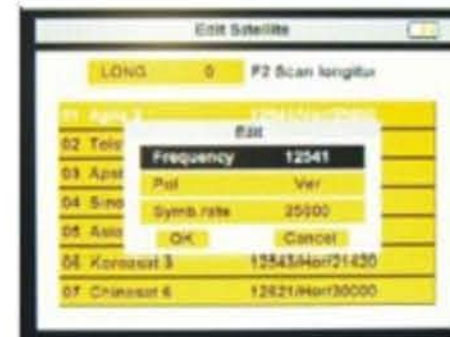
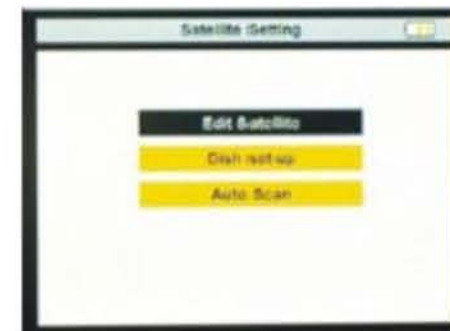
- Satellite Finder Set
- Special power supply adapter
- RF input connector GMHF-L9.5-JK
- Data cable
- Instrument bag
- CD-ROM
- Operators manual
- Quick Start Guide



#### Specifications:

- Specifications:
- System Standard:DVB-S
- System Cpu:200MIPS Input
- Frequency:950~2150MHz
- Input Level:65dBm ~ 25dBm
- System Rate:2M---45M
- Connector:F type
- Screen:3.5Inch High definition LCD
- Sound:Built-in speaker audio output

- DiSEqC:22KHz switch Indicator light 13/18V
- upgrade cable:Rs323 COM port cable
- updrade Software:Rs323 port for software updatas
- Working time:2-4 hours or more
- Operating temperature:0c ~ +50c
- Size:9.6cm\*15.8cm\*4.8cm and Portable backpack





### ST-6000 Satellite TV Meter

#### Description:

The Digital satellite finder ST6000 is a professional, quality made instrument for setting and aligning a satellite dish to any satellite. According to parameters of the satellite, you can set and align a satellite dish very accurately, quickly and conveniently. Show the TV directly by colorized LCD. Smallest and lightest satellite finder which has the colorized LCD. Graphic user interface, Designed to be very easy to use. With Fast and easy menu structures. It can calculate Azimuth, Elevation and Polarization automatically according to local longitude and latitude and show these details on the colour LCD display.

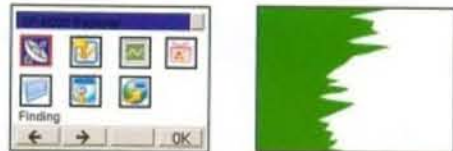
It can communicate with your PC through the serial port and you can update new satellite parameters conveniently. With A Large memory capacity you can pre-store 80 satellites parameters and 40 measurement records. With the high quality LCD screen you can watch the TV channel from the satellite you are testing. This is giving the ultimate verification that the satellite you are looking at is the correct one.

#### Specifications:

- Frequency range: 950MHz~2150MHz
- Signal level range: -65dBm~-25dBm
- RF input connector: F type
- Input resistance: 75ohm
- 22KHz Signal: 22KHz+2KHz
- Items of measurement: QPSK signal level, Bit error rate, carrier rate
- Storage: 80 value of measurement, 80 configuration data
- Mode of satellite finding: Sound and LCD volume
- LNBpowersupply: Horizontal polarization+1.8V, <400mA Vertical polarization+1.3V, <400mA
- Total power: 8W
- Working time: 3~4hours
- Connector: Rs232
- Working temperature: 0~400C
- Storage temperature: -20~700C

#### Package Content:

1. Common power supply adapter or Cigarette lighter adapter 1 piece(Note: Adapter is optional. )
2. RF input connector GMHF-L3/8-JK 1piece
3. Instrument bag 1 piece
4. Operator manual 1 piece
5. CD-ROM 1piece
6. Data cable 1piece



### ST-3000S Digital Satellite Meter

#### Description:

The ST3000S Digital Satellite Finder Meter is an innovative professional satellite identification and alignment meter. This device is easy to operate. The signal strength and picture quality (BER) meter will speed up and improve your dish installation.

It communicates with the satellites digital transmissions with "Unique Satellite Information Data" (USID). While most pointing devices only give you a general idea that there are indeed satellites in the sky and allow you to peak the signal, the ST3000S takes you one step further by positively identifying the satellite.

After selecting a country and city, the Finder Master Software will calculate the parameters to adjust the satellite dish automatically. The parameters include Azimuth, Elevation, and Polarization. They are displayed in graphic and table mode.

This information can be downloaded by the RS-232 cable provided, from your PC to your ST-3000S easily and effectively to locate the satellites from your destination.

The ST-3000S has USB Connect Port so as to transmit data with your PC conveniently, which is the primary amelioration compared with the ST-3000.



#### Package Contents:

- ST3000S Digital Satellite Finder Set
- Special power supply adapter
- RF input connector GMHF-L9.5-JK
- Data cable
- Instrument bag
- CD-ROM
- Operators manual
- Quick Start Guide



#### Specifications:

- DC power supply: DC4.8V rechargeable battery
- Working time: 3 - 4 hours
- Charging time: 4 - 5hours
- Power adapter input: AC110V / 60Hz / 220V / 50Hz
- Power adapter output: 10.5VDC 1000mA
- Display: 124 x 64 wide-range temperature liquid crystal display
- Audio output: build-in speaker
- Port: USB (default)
- Switch: 22 KHz support



### ST-1001 Mini Signal Level Meter

**Features:**

- Level measure
- Tilt and C/N measure
- Customized channel plan
- Mini size and light weight
- Aseismatic design

**Specifications:**

Frequency	
Frequency	Range 46 MHz~864MHz
Accuracy	±50ppm
Tuning Resolution	50kHz
Level Measurement	
Range	30dBμV-120dB μ V
Accuracy	±2dB @ 25℃
Resolution	0.5dB
Voltage	
Input Range	1V-100V (AC/DC)
Accuracy	±2V
Resolution	1V



### ST-5103 Three Frequency Points

**Features:**

- Three Frequency Output simultaneity
- Output level is adjustable.
- Small dimension,light weight

**Specifications:**

Output Frequency (One group)	Group1 : 7.2MHz/27.1MHz/60.0MHz Group2: 8.0MHz/34.0MHz/51.0MHz Group3: 8.0MHz/34.0MHz/60.0MHz Group4: 10.0MHz/20.0MHz/40.0MHz
output level	90dBμV ~ 105 dBμV(Adjustable)
Battery	2Ah AA Ni-MH battery
Work time	above 3 hour



### ST-5112 HFC Return Path Signal Generator

**Features:**

- Advanced DDS technique and high- speed D/A chip
- Automatic temperature supplemental circuit and output protect module
- Small dimension, light weight

**Specifications:**

Frequency range	5MHz-65MHz
Frequency accuracy	±20×10-6
Minimum frequency step	100KHz
Maxmum output level	110dB μ V
Maxmum output attenuation	30dB/1dB step
Output level accuracy	< ±2dB
Output impedance	75Ω/BNC
Battery	2Ah AA Ni-MH battery
Work time	above 4.5 hour



### ST-6130 TDR (Cable Fault Locator)

**ST-6130** applies the advanced TDR measuring technique, which can display the cable failure with locus format on the LCD, and locate the distance of the failure points. It can be used in failure locating and dimensional measurement.

It is used to locate any kind of RF cable faults like short circuits, open circuits or high resistance joints.

ST-6130 handset adopts the Time Domain Reflection technology, displaying the time domain reflection picture on the LCD, using the analysis software to analyze the status of the cable. ST-6130 can be used in testing cables of 25W, 50W, 75W and 100W impedance and more than 2km with high accuracy.

ST-6130 has powerful analysis functions, the double cursor can be defined as time marker to indicate distance, and distance test can be defined as absolute scale and relative scale to be used in fault location. It can be defined as amplitude marker to indicate impedance characters.

#### Specifications:

Impedance	25/50/75/100/ohm
Impedance Resolution	5%
<b>Distance</b>	
Measurement Range	15m-2000m
Resolution	1m
Accuracy	1m
<b>Others</b>	
Dimension	190mm×80mm×152mm
Weight	600g
Working temperature	-10℃~+50℃
Storage temperature	-20℃~+70℃
Display	128×128LCD (With back light power source)
Battery	7.2V 1.8AH Ni-MH batteries
Charger	AC 90V-240V 50/60Hz DC 9V-0.7A
Working time	average 7-8 hours (Full charge)
Charge time	More than 12 hours

#### Features:

- Displays all the drawing and character on larger LCD, shows various measurement details clearly.
- files saving and printing functions are convenient to manage and contrast the data
- Unique zoom in/out functions can locate the failure points precisely
- Handle design, storage and print Locate the fault of cable such as short circuits, open circuits or high resistance joints
- Large screen and display the curve



### ST-20 Satellite Finder

**ST-20** is a battery powered hand held satellite meter, which features small size, simple to use and spectrum Analysis. It powers LNB and can set the satellite parameter via USB interface by PC software.

This instrument is extremely fast and accurate with high sensitivity and stable display which make satellite identifying more easily.

#### Specifications:

RF Input Range	950 ~ 2150MHz
Level Range	30dBμV ~ 110dBμV
Symbol Rate	1 Msps ~ 45Msps(QPSK)
LNB Supply Volt	13V, 18V, OFF
LNB Supply Current	≤500mA
Battery Capacity	7.2V/1600mAH lithium battery
Dimension	153×93×42mm
Weight	358g
Work Time	More than 4 hours(13V)

#### Features:

- C, Ku, Ka or L band
- SNR and BER
- Spectrum function
- Signal level and quality display together
- 128×64 dot matrix LCD with back-lighted
- Large lithium battery capacity, over 4 hours working time
- Software upgrade and parameter set via USB interface



### SF-95 Satellite Finder

#### Features:

- in-line IF signal strength meter
- Excellent sensitivity
- DC pass to LNB and internal lightin
- Built-in buzzer
- Elegant exterior and convenient to carry
- Input Frequency: 950-2150MHz
- Input Level Max: -10dBm
- Supply Voltage: 13-18V DC
- Input Level Min: -40dBm

#### Specifications:

Satellite Finder SF-95 - new Signal Meter that monitors signal strength on any analog or digital signal.

Satellite Finder SF-95 - works with:

- DSS DirecTV
- DISH NetWork
- ExpressVU
- FTA MPEG2/ DVB Receivers
- C band & KU band satellite Signales
- Greate product for the Do-It-Yourselfer
- Easily setup satellite dishes on RVs, motor homes, picnic tables, truck, decks roofs, or any where you want to setup your dish.
- Make adjustments yourself without a second helper
- What took 30 minutes now took 30 seconds

Since Satellite Finder SF-95 uses the power drawn from the line itself, no power cord is needed to make it light and function. This makes Satellite Finder SF-95 especially easy for the more remote dishes as well as RV installations.

A tone provides the audio cues while the lighted meter provide all the visual cues you will need to set up alignment in minutes.